

Remarks

Claims 1 and 6-16 were pending.

Claims 13-15 are withdrawn.

Claim 1 is amended.

Claims 17 and 18 are new.

Claims 1, 6-12 and 16 are rejected

Claims 1 and 6-18 are now pending.

Amended Claim 1

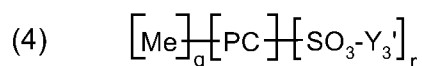
Applicants have amended claim 1 to reinsert the term “sulfo” terms previously deleted. Support may be found in original claim 1.

New Claims 17 and 18

New claim 17 is fully supported by the disclosure on page 9. lines 11 -21.

In an earlier amendment the Office was of the opinion that a claim similar to this would be improper as it would not be encompassed by the presently elected invention.

New claim 17 encompasses



in which

PC is the phthalocyanine ring system;

Me is Zn; Fe(II); Ca; Mg; Na; K; Al-Z₁; Si(IV); P(V); Ti(IV); Ge(IV); Cr(VI); Ga(III); Zr(IV); In(III); Sn(IV) or Hf(VI);

Z₁ is a halide; sulfate; nitrate; carboxylate; alkanolate; or hydroxyl ion;

q is 0; 1; or 2;

Y₃' is hydrogen; an alkali metal ion or ammonium ion; and

r is any number from 1 to 4.

New claim 18 is based on original claim 7.

No new matter is added.

All elements of the above structure (4) fall within elected structure 1b. Me, Z₁, q, and r all are defined in original claim 1, structure 1b elected.

Applicants believe the confusion by the Office is likely from the [SO₃-Y₃'] group, further defined in structure (4).

Sulfo substitution on the phthalocyanine ring is indicated as one of the groups possible under Q₂, original claim 1 and under elected structure 1b.

Note that the term sulfo means a SO₃ radical. Accordingly, giving the claims their broadest interpretation (which is proper) one skilled in the art would know that the phthalocyanine may be substituted by SO₃H or SO₃M (wherein M is a counter ion). In the case of the new claim 17, -SO₃Y₃' would correspond to a sulfo radical which is SO₃ neutralized by a corresponding counterion. In case the Office is of the opinion that this neutralized sulfo radical falls under (1a) not elected, we point out that (1a) must carry a positive charge and A_s⁻ is an anion. Accordingly, structure (4) in the new claim 17 cannot be encompassed by (1a).

Respectfully, the Applicants request that the Examiner reconsider his previous analysis and examine new claim 17 on the merits as it clearly falls within the scope of the elected (1b) structure.

35 USC 103(a)

Claims 1, 6 and 10-11 are rejected under 35 USC 103(a) as being unpatentable over Bonelli, et al., U.S. 2003/0087791 in view of Kaser, U.S. Pat. No. 5,211,719 and Campbell, U.S. Pat. No. 5,853,929.

The Present Claims

The problem underlying the present invention is to avoid the accumulation of dyestuffs which are for example present in detergents or softeners and lead to an increasing coloration of a fabric after several wash cycles. Dyes are frequently used to improve a bleaching and whitening effect. However, dyestuffs accumulate with every use and after a few uses the fabrics become colored. See page 1, lines 7-23.

This problem has been solved by providing a composition comprising a water-soluble phthalocyanine photocatalyst of formula (1b) or of formula (4) (claim 17) and further comprising a triphenylmethane or azo dyestuff which produce a relative hue angle of 220- 320 degrees and wherein the dyestuff component is degraded when the composition is exposed to sunlight and wherein the degradation rate of the azodyestuf(s) and/or the triphenylmethane dyestuff(s) is at least 1% per 2 hours.

Accordingly, the present invention has located a mixture of a particular water soluble photocatalysts and by combining with certain dyes the components of the mixture, when applied to the fabric are destroyed by light. When the dyestuff as such without the photocatalyst is applied to the fabric, it is not destroyed (or destroyed much slower). To further explain, the Applicants have discovered a mixture of components which surprisingly which achieves a suitable shading effect upon washing but does not discolor the fabric over time.

Bonelli is cited as disclosing a colored granular composition comprising photobleach. The photobleaches are for instance phthalocyanine sulfonates, para. [0021]. Other ingredients include for example dyes, para. [0074].

Bonelli have disclosed a coloured speckle compositions which comprises a photobleach which carried on a spray-dried detergent base powder that it floats to the surface of the wash liquor due to its natural density and delivers a photobleach to the fabric with little or no staining. See para. [008]

The photobleaching components used in the examples of Bonelli are zinc and aluminium phthalocyanine sulphonate and aluminium phthalocyanine sulphonate.

Examiner agrees that Bonelli does not teach the combination of the photobleach with the azo and triphenylmethane dyestuffs with the resulting hue and the necessary dyestuff degradation upon exposure to sunlight.

Accordingly, Examiner sites Kaser as disclosing aqueous solutions of azo dyes and Campbell as disclosing a phthalocyanine dye with a relative hue angle of 220-230°.

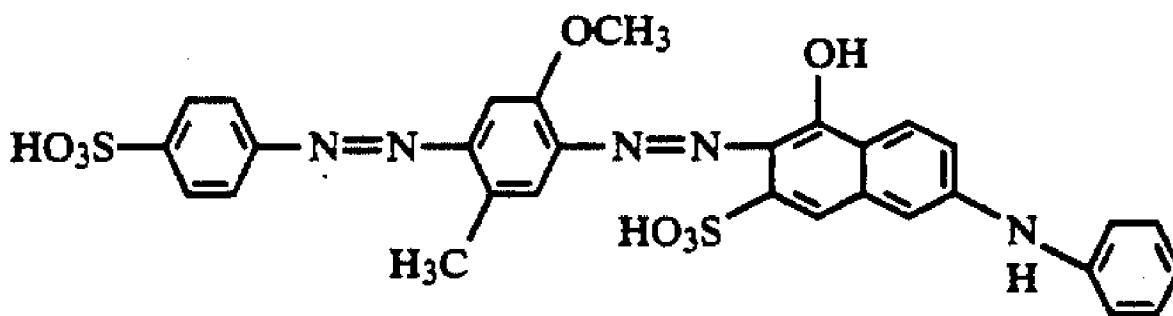
Kaser teaches concentrated aqueous solutions of anionic diazo dyes with polyglycol-amine. Suitable dyes are disclosed in example 2, which corresponds to the free acid dye recited in present claim 7.

Examiner believes the motivation for combining these two references resides in the Kaser disclosure which states "with the benefit of exhibiting a wide gamut of shade in conjunction with other dyestuff and improved properties such as avoiding a coloration of the fabric" (col. 3, lines 6-9). See last office action, page 4, first paragraph.

The Applicants respectfully note that Kaser makes **no** such statement at col. 3, lines 6-9. In searching the reference carefully, the Applicants have not been able to locate any such a statement within the bounds of Kaser. Thus the Applicants submit that the Examiner is mistaken. Alternatively, the Applicants request that the Examiner correctly identify the motivation for combining Kaser with Bonelli.

Certainly there is no teaching within Kaser to incorporate his dyes within a detergent or fabric softener. The basis of the combination appears to be that the azo dye simply exists. A proper case of *prima facie* obviousness requires more than assembling components from various references using the present application as a blueprint.

Additionally, although the free acid structure in example 1



is taught in Kaser, the Kaser invention relies on the polyglycol-amine salt thereof. Kaser has determined that highly concentrated solutions of this dye salt are possible only. This is the basis of his invention. Thus one skilled in the art would be motivated to take the polyglycol-amine salt thereof and combine to produce highly concentrated aqueous solutions. There is no motivation to add such dyes to a detergent or softener. And there is the question of whether this particular salt when combined

with a phthalocyanine presently claimed would have the proper hue according to the limitations of the present claims? On what basis has the Office determined this hue inherency of the salt?

The Office is of the opinion that both Bonelli and Kaser are analogous art because they are from the same filed of the endeavor, namely that of the shading composition. This linking of the references is respectfully incorrect. While Bonelli is directed to speckles in a laundry detergent and the incorporation of a photobleach material within the speckles, Bonelli makes no mention of shading compositions at all for fabric. Kaser is directed to concentrated aqueous solutions of dyes. The solutions are for coloring paper, board or cardboard. The liquid may also be used for dyeing process of textile materials. There is nothing in either reference which would link them for the purposes of shading compositions for use in detergents.

Cambell teaches that a number of disperse dyestuffs or solvent-soluble dyestuffs have been evaluated for use as color toners, but not all possess the required characteristics of stability to the processing conditions encountered on formulation or the required stability and fastness when applied to a substrate and disposition in color space to provide for a wide and useful gamut of shades from a small number of colorant. Campbell further teaches that certain metal phthalocyanine blue dyestuff exhibits particularly useful properties as a colorant for use in electrophotographic toners and that such a toner in conjunction with a specific azo pyridine yellow dyestuff and specific benzodifuranone red dyestuff will provide a wide gamut of shades with particularly useful properties. See col. 1, lines 16 - 41.

Accordingly, Campbell teach colorfast compositions. See examples.

The Office is of the opinion that Campbell teaches hues between hue angle of 220-320 ° in Table 1 in column 7. While Campbell teaches hue falling between these ranges, the present claim limitations require that the phthalocyanine be combined with at least one azo dyestuff and/or at least one triphenylmethane dyestuff, which produce a relative hue angle of 220-320 °. The Table 1 of Campbell discloses various single colorants of a range of hues. The hues disclosed within Campbell thus do not provide the presently claimed hue element and even if combined with Bonelli, Kaser and Campbell .

Furthermore Campbell teaches that the phthalocyanine is solvent soluble, not water soluble as presently required.

The Examiner states on page 5, first paragraph of the last Office Action, that since Campbell teaches these dyestuff provides a wide gamut of shade in conjunction with other dyestuff (Col. 5, lines 57-59) with the benefit of exhibiting a wide gamut shades with particularly useful proerties (Col. 1, lines 40-41) one skilled in the art would be motivated to use them. However, Campbell seeks a trichromatic set of colored toners which are stable with excellent fastness properties. This is completely non-analogous art.

Furthermore, the Office has stated:

that "Products of identical chemical composition can not have mutually exclusive properties". A chemical composition and its properties are inseparable. Therefore, if the prior art such as the combination of Bonelli and Kaser teach the identical chemical structure (i.e. a blend aluminium phthalocyanine sulphonate and azo dyestuff), the properties (i.e. the dyestuff component is degraded at the rate of at least 1% per 2 hous when the composition is exposed to sunlight) discloses and/or claims are necessarily present. See page 4, lines12-18.

While Applicants agree that products of identical chemical composition can not have mutually exclusive properties, the combination the Examiner relies on is a combination derived from two separate references. The references are not particularly related. Furthermore, the combination leads to an unobvious effect not taught or suggested by either reference (degradation of the azo via the photocatalyst). If one were simply replacing one equivalent for another with no new effect or result (replacing the azo dyes disclosed in Kaser with the generic dyes taught in Bonelli), this would be obvious. But the present case is not the simply replacement of one equivalent for another but one which leads to a different result or effect as explained in more detail below.

Claim 7 is rejected under 35 USC 103(a) as being unpatentable over Bonelli in view of Kaser and Campbell and further in view of Abel, et al., U.S. Pat. No. 4,405,329.

Abel is cited as disclosing concentrated fluid formulations of textile dyes where the dye may be of formula (103) of col. 13.

Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Bonelli in view of Kaser and Campbell and further in view of Matsumoto, JP 62025171.

Matsumoto is cited as disclosing dye compounds for relief patterns for microcolor filters containing triphenylmethane dyes and phthalocyanine dyes.

Claims 9, 11, 12 and 16 are rejected under 35 USC 103(a) as being unpatentable over Bonelli in view of Kaser and Campbell and further in view of Willey, Pat. No. 5,916,481.

Willey is cited as disclosing laundry or cleaning compositions comprising TINOPAL CBS-X. Willey is also cited as disclosing liquid formulations and as disclosing the use for treating textiles.

The Applicants are of the opinion that the combination of Bonelli, Kaser and Campbell does not rise to a proper *prima facie* case of obviousness and will proceed to make the arguments in light of these references only. All other rejections, claims 7, 8, 9, 11, 12 and 16 require the reliance on these first two references. None of the additional references (Wiley, Matsumoto and Able) make up for the deficiencies of the first three references.

Additionally, as mentioned above, the particular combination of elements specifically claimed are shown within the application to give unobvious results.

The present Examples impressively demonstrate the increased degradation rate of the dyestuffs, when the phthalocyanine compound is present. The results are summarized in Table 1 of pages 74-75 of the disclosure. Table 1 is reproduced below.

Photocatalys 1 is a mixture of sulfonated Al and Zn tetrabenzo-tetraaza-phorphyrines (Tinolux® BMC liq).

Photocatalyst 2 is sulfonated Zn tetrabezo-tetraaza-porphyrine.

Accordingly each of the photocatalysts are encompassed by the structure (1b in claim 1) and (4 in new claim 17).

The dyes within the examples are all azo dyes falling under claim 7 and new claim 18.

Table 1

	Photo-catalyst	Concentration Photocatalyst [$\mu\text{mol/l}$]	Dyestuff	Concentration Dyestuff [$\mu\text{mol/l}$]	Degradation of the Photocatalyst after 2 hours	Degradation of the Dyestuff after 2 hours
1	1	3.6			11.69%	
2	1	3.6	B	1.44	10.75%	4.65%
3	1	3.6	B	3.25	9.74%	5.36%
4	1	3.6	B	5.57	10.01%	4.58%
5	1	3.6	B	6.49	11.01%	5.50%
6	1	3.6	B	30.30	8.61%	3.63%
7	1	18	B	7.21	6.43%	6.72%
8	----	----	B	4.33	---	0.20%
9	2	3			17.19%	
10	2	3	B	4.33	15.71%	5.72%
11	2	3	A	4.41	9.51%	20.50%
12	----	---	A	4.41	---	0.20%
13	1	3.6	A	2.94	7.42%	17.18%
14	1	3.6	A	6.62	5.38%	16.13%
15	1	3.6	A	11.35	4.62%	15.02%
16	1	3.6	A	13.24	4.57%	15.47%
17	1	18	A	14.71	5.66%	20.51%

Whereas the dyes degrade only to an extent of 0.20% after 2 h exposure without the phthalocyanine compound, the degradation is increased up to approximately 4 to 20% in the presence of the phthalocyanine. This corresponds to **a 20 to 100 fold relative increase of degradation**.

This result is surprising. A skilled person would not be motivated from the prior art to expect such an increased degradation rate of the dyestuff. There is no expectation of success in view of the cited references.

To summarize:

- Bonelli is directed to certain speckled compositions which may be included in a detergent. The colored speckles contain a photobleaching phthalocyanine. Bonelli seeks to prevent staining of the fabric by the photobleaching compound. Apparently Bonelli is able to do this by applying photobleaching compound onto a low density carrier. Accordingly the carrier plus photobleaching compound rises to the top of the wash water, not staining the fabric. Although Bonelli teaches dyes as part of his detergent composition, it is very unclear why one skilled in the art would take this reference and combine with a dye and expect that the net effect would be to reduce the staining effect on fabric.
- Bonelli does not disclose any azo or triphenylmethane dyestuffs within his detergent compositions. Examiner has relied on Kaser to show that azo dyes are known. The fact that an element is known does not make a *prima facie* case of obviousness. The Examiner is clearly aware of this. However, the motivation he cites for combining does not exist within the bounds of Kaser. The Applicants have read the citation carefully and can find no statement which reads “the benefit of exhibiting a wide gamut of shade in conjunction with other dyestuff and improved properties such as avoiding a coloration of the fabric”. The Applicants respectfully request that this be clarified. Kaser is directed to concentrated aqueous dyestuffs. The subject matter is unrelated to detergents and there is no reasoning found in either Bonelli or Kaser which would direct one skilled in the art to take the photobleaching phthalocyanine from Bonelli and combine with the azo dyestuffs of Kaser.
- Campbell discloses a trichromatic set of colored toners comprising a blue **solvent** soluble phthalocyanine compound. The technical field of trichromatic toners for use in electrophotography is totally different from that of shading dyes in detergents. Campbell is non-analogous art. Further, this document teaches away from the present invention since when mixing dyes within a trichromatic set of dyes it is highly desirable that all dyes have an equally good light stability. See the examples. The combinations of Campbell are light stable. What possible motivation lies in this reference which would induce one skilled in the art of detergent formulations to combine a water-soluble phthalocyanine (when Campbell teaches a solvent soluble phthalocyanine) with an azo dyestuff and expect that this would give a good shading composition for detergents and one which would not discolor the fabric over time due to the degradation by the

phthalocyanine of the dyestuff? Campbell seeks a light fast color not one which degrades over time.

- The Office is of the opinion that Campbell teaches hues between hue angle of 220-320 ° in Table 1 in column 7. While Campbell teaches hue falling between these ranges, the present claim limitations require that the phthalocyanine be combined with at least one azo dyestuff and/or at least one triphenylmethane dyestuff, which produce a relative hue angle of 220-320 °. The Table 1 of Campbell discloses various single colorants of a range of hues. The hues disclosed within Campbell thus do not provide the presently claimed hue element. Thus even if combined with Bonelli, Kaser does not arrive at the present claim limitations.
- Finally, the evidence within the application speaks for itself. There is a **20 to 100 fold relative increase of degradation** of the shading dyes. Even if it were proper to combine the references as the Examiner suggests, the combination arrives at an effect which is surprising, the ability to shade fabric using a detergent without the problem of fabric discoloration over time. This is accomplished by the combination of the water-soluble phthalocyanine with the particular shading dyes and the degradation of the dyes via the water-soluble phthalocyanine photocatalyst. Certainly, Bonelli did not recognize that by adding a dyestuff with the water-soluble phthalocyanine, that the discoloration of fabric could be prevented. Kaser tells us nothing about such a possibility as Kaser deals only with concentrated aqueous dye solutions. Campbell is even more remote.
- Furthermore, the Applicants believe the evidence is commensurate with the scope of the claim 1 and in particular commensurate with the scope of claims 17 and 18.

Applicants submit that the combination of the above references is improper and does not lead to a *prima facie* case of obviousness. Further, the evidence relied on above indicates unobviousness. When elements individually known in the prior art are combined to achieve an effect which is not taught or suggested elsewhere, the combination is unobvious. The present degradation of azo and triphenylmethane dyes in the presence of phthalocyanine and sunlight could not have been expected from the references cited. Nor could this effect have been envisioned from the cited reference for overcoming the problem of discoloration of fabric overtime when exposed to shading compositions within a detergent or fabric softener.

In view of this discussion and the results of the working Examples, Applicant submits that these 35 USC 103(a) rejections are addressed and are overcome.

The Examiner is kindly requested to reconsider and to withdraw these rejections.

Respectfully submitted,
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Enclosure: Fee for 3 month extension of time.

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